GARDEN AND FOREST.

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Legislation for the Adirondacks.

THE Legislature of this state, which is soon to adjourn, has enacted three or four laws which ought to prove of distinct and permanent advantage to the Adirondack forests, and it has failed to pass certain other laws which are imperatively demanded if the safety of the forests is to be assured. Railroads are most to be dreaded as agents of swift and certain devastation. Every new line which penetrates the woods means remediless ruin as far as it goes, and the first duty of the law-making power toward the forest is to prevent the laying of another foot of track on the State Reservation. Existing charters cannot be revoked, but the authority now resting with the Commissioners of the Land Office to grant to railroad companies land belonging to the people of the state should be restricted; and the failure of the bill exempting from this provision of the General Railroad Act the lands included in the Forest Preserve is a calamity.

On the other hand, convictions for trespass on the state lands have been made more practicable by the Change of Venue Act, which authorizes a trial where it may be possible to secure jurors who have not been educated in the belief that the state has no right to protect its own forest-property. The amendment now pending, with good prospect of passage, in regard to the cancellation of sales by reason of occupancy, which shifts the duty of giving notice from the state to the claimant, will be of great assistance in quieting the title to lands which of right vests in the state. The act appropriating $25,000 for the purchase of lands by the state is important as establishing a policy. The amount named will buy but little land, but it recognizes the principle that absolute ownership on the part of the state gives the only assurance of a proper administration of the forest-region. But perhaps the most important step taken was the enactment of the concurrent resolution directing the Forest Commission to investigate the advisability of establishing a State Park to contain some three million acres, embracing the head waters of all the streams of consequence which take their rise in the wilderness. The report which is to be made to the next Legislature is to include an estimate of the probable cost of the land, with suggestions as to the proper boundaries of the park and a discussion as to its various local features, with reference to their value for this special use.

Of course this does not commit the state to the policy of buying the lands now in private hands which it will be necessary to acquire if a compact area of the size contemplated is secured. But it does show a readiness to consider the question with a full appreciation of the fact that to carry out the project will cost millions of dollars. Many of the questions to be answered are puzzling enough. If the scheme is considered advisable, will it be more prudent for the state to go into the market as a buyer or to condemn the land and trust a commission to fix its value? Will it be better to insist on taking all the land as it is, or to pay a lower price for some and allow the removal of its marketable Spruce, say, under certain restrictions? Scores of questions like these will obtrude themselves upon the Commissioners, and even if they could command the help of skilled subordinates in making the needed surveys and investigations they will be obliged to keep steadily at work throughout the year if a report is prepared which treats the matters involved with adequate thoroughness.

Our own belief is that the land should be bought, and that it never can be bought to so good advantage as it can to-day. The difficulties in the way of the purchase are almost appalling, but they will grow more serious every year. The entire tract could have been bought for a song when the Commission with Horatio Seymour at its head reported on its condition, and every one now sees that it would have been a wise investment for the state. If the proposed purchase is now abandoned there is little doubt that the people of the state in after years will look back to this failure as another lost opportunity.

The following paragraph appeared last week in the *Boston Herald*.

Monday afternoon, Thomas Coughlin, living on the Tower road, Lincoln, started a brush fire near his place, and, the wind shifting, his barn was destroyed with its contents, entailing a loss of $1,500. The fire continued through the woods, and yesterday afternoon reached the dwelling of Michael Leahy, on the same road, destroying it; loss, $4,000. Last evening the fire was still raging furiously, and the residents of the town had turned out en masse to fight the flames, which have burned over nearly 300 acres.

Similar paragraphs appear almost daily at this season of the year in the daily journals published in the Northern States.

A man thoughtlessly and carelessly sets fire to his brush-heap. He may or may not have selected a proper day for this operation. The wind changes or increases, and before he knows it, almost, his bonfire has extended to a neighboring bit of woodland, and once having started, the conditions at this season of the year being particularly favorable for the spread of fires in the woods, a great conflagration is generally the result. It is folly to expect people to improve their woodlands or to hold forest-property as long as such property is subjected to unrestrained burning at the hands of irresponsible people. The lumbermen's adage that "no forest is safe until it is cut down" will hold until the public is willing to afford some protection to property of this character. It is not easy to see why one man should be allowed to jeopardize his neighbor's property and another should be restrained from doing so. This community would not hold that a resident of Fifth Avenue who should be restrained from building a big bonfire on a windy day in his back yard would suffer injustice, and yet his fire would not be a greater menace to his neighbors' property than the fire of a farmer burning his brush-pile. There can be no security of forest property in the Eastern and Northern States until laws are passed regulating within proper limits the setting of brush fires by individuals on

their own land, and making them responsible for the damage caused by such fires. To secure the passage and enforcement of such laws, should be the aim of our various forest associations and of all persons interested in forest-property.

The Autocrat of the Breakfast-table has the love and veneration of the old school New Englander for those noble Elm-trees which, when he was a boy more often than now, were the glory of the typical New England homestead; and thirty years and more ago he proposed the scheme of an imaginary work illustrated by photographs taken upon the same scale of magnitude, and accompanied by letter-press descriptive of New England Elms. Now at last this scheme assumes definite shape, and Little, Brown & Co., of Boston, are to publish "Typical Elms and Other Trees of Massachusetts." Dr. Holmes himself, as is fit and becoming, stands god-father to the enterprise in a charming introduction; the illustrations are reproductions, by the photogravure process, of photographs made by Mr. Henry Brooks, of Medford, whose fellow-townsman, Mr. L. L. Dame, furnishes the accompanying text which supplies historical and statistical information about the different trees. Tree lovers in America have long felt the desirability of a work of this sort to preserve portraits of famous and remarkable American trees just as Strutt preserved in his classical "Silva Britannica" portraits of famous British trees, and Mr. Brooks earns their gratitude by doing this very thing. The work is not taken in hand too soon. Many of the trees which were famous in New England when New England was an English colony, disappeared long ago, as have many of the less famous trees Dr. Holmes speaks of in his preface; and the number of really great and distinguished trees is growing less every year in all the northern parts of the country, where changed conditions, material and social, are rather against their successors replacing them in historical interest or in mere bulk of trunk and spread of branches. Mr. Brooks' book will appeal to all lovers of trees. It will be a quarto volume of more than one hundred and twenty pages and will contain fifty illustrations. It proposes to show the possibilities attainable in Massachusetts by trees of different species under favorable conditions. Trees remarkable for age, beauty, size or historic interest have been selected.

Flower Painting.

To paint a flower well four things must be shown: color, form, texture and substance; the hue of the blossom must be rendered, its outline and the shape of its petals, the peculiar quality of the surface of these, and the degree of solidity or fragility in which their accumulation results. Then, to make a good picture with the chosen flowers, other things must be considered—as the grouping of the subject, its lighting and the general color-scheme of which the hue of the flowers themselves forms but a part. The task, in short, is a very complicated one. If the amateur is apt to consider it the easiest he could attempt, his recklessness is explained by the fact that even a poor rendering of a very beautiful theme will attract the uncritical eye. One needs to paint admirably well to please any one with the picture of a potato; but a picture of a Rose, though it be but a travesty, passes for something pretty with the majority of observers.

The more experienced artist, knowing the difficulty of his enterprise, usually takes the quite allowable course of insisting more upon one side of his theme than upon the others. Perhaps he lays most emphasis upon the decorative effect of his picture as a whole, trying to do no more than indicate the characteristics of the flowers which are its most prominent feature. He arranges them in an effective mass and insists on their coloristic beauty as related to the surroundings which he has supplied for them, leaving their form, their texture and their substance to be divined from the hints he gives. If these hints are rightly given, if they point to the truth although they do not explain it, and if the main explanation is truthful and beautiful, the critic finds no fault with the picture. He accepts it as an interpretation of one quality which the flowers possess; and he knows that it is not needful that art should try to show more than one thing at once. Naturally, in this kind of flower painting, only such models should be chosen as lend themselves best to the special aim in view. Peonies, Chrysanthemums, China Asters and a hundred common summer flowers like the Eupatoriums and Goldenrods are by nature adapted to a treatment in which a mass of gorgeous color is the aim, depending little upon form, texture or substance for the beauty we find in them; and the same may be said in a lesser degree of Geraniums and of double Violets, which are good material for smaller pictures of the kind. Any one who has been familiar with our annual exhibitions will remember the delightful large water-colors of Miss Greatorex, where, very often, masses of brilliant blossoms have been shown in the white paper cones dear to Parisian peddlers, giving a delightful picture not, in strict truth, of the flowers, but of their coloristic beauty.

It would not be wise to choose such flowers as these when effects of linear beauty are desired in a picture, but there are others admirably suited for such a purpose, like the Iris, the Amaryllis, the Narcissus, the Tigridia, and many kinds of Lilies, from the Japan Lily of the garden to the Wild Lily of the fields. All these are exquisite in color, but owe their peculiar charm even more to form. So beautiful, indeed, are their forms that if these are sympathetically felt and faithfully rendered, color may be entirely suppressed and still the picture be pleasing. A black and white drawing of a row of China Asters would be scarcely worth making; but such a drawing of a row of Irises might be well worth seeing. Decorative artists have known these facts in all the great building ages of the world. The Lotus, the Honeysuckle, the Iris, the single Rose and star-shaped blossoms of one sort or another have been most conspicuous in architectural ornament when it is painted as well as when it is carved.

Certain flowers are chiefly remarkable for what may be called dignity of bearing. The Gladiolus has this dignity together with great beauty of form in the individual flowers; the Fox-glove, the Larkspur, the Tuberose and the Crown Imperial have it; and the Hollyhock has it without any special elegance of form. Again, a graceful habit is the most characteristic trait, as with the Solomon's Seal, the Laburnum, many flowering shrubs, and, in a different way, the Lily-of-the-Valley and the Poppy. Still again, an angular, somewhat eccentric manner of growth is the plant's main characteristic, as in many which Japanese artists love to paint; and flowers of such kinds should, of course, be painted so as to bring out their special qualities most clearly.

No one would paint flowers chiefly for their texture (as one might paint a piece of satin) or chiefly for their substance; these are characteristics which can sometimes be almost overlooked, and at other times be made of accessory importance. That is to say, when the picture as such is the prime consideration, when a general decorative effect is desired above all else. When we come to absolute portraiture—to the rendering of flowers for themselves, not for the part they can play in some larger scheme of beauty—then texture and substance must be as much considered as form and color. To give the shape and tint of an Azalea blossom without giving its translucent texture, its fragile substance, would be to caricature it. To paint a Catherine Mermet Rose and not show that it is solid and heavy would be—not to paint this Rose. Naturally it is very difficult to achieve all these qualities together—to give the form of a flower exactly without making it seem hard, its color exactly without slurring its form, its substance exactly without travestying its texture. It is so difficult that we rarely see complete success except where the task has been simplified as much as possible. The best portraits of flowers are apt to be those where a very few blossoms of a single sort have been arranged and lighted as simply as possible. When Mr. La Farge shows us a single Water Lily he gives its form, its color, its texture, its substance—almost its odor. But did he conceive a large group of Water Lilies with adjuncts of various sorts, arranged and lighted so as to make a striking pictorial effect, he would probably choose some one quality of the flower for accentuation and merely hint at the others. At all events, though success with his single blossom cannot have been easy, it would be infinitely more difficult with many.

When flowers are painted as they grow out-doors in masses, forming part of a landscape composition, then, naturally, nothing but their color need be insisted upon, no matter what may be the dignity or elegance of their forms upon closer examination. Color is always the quality that, as painters say, "carries furthest," remaining distinct at a distance where forms and even habits of growth may be quite invisible.

On the average exhibition wall we seldom enough find any true excellence in the painting of flowers. Even good taste in the placing of the models so that their peculiar characteristics might best be presented to the painter is very rare. Gladioli are heaped together in a low bowl; double Violets are spread

out in a ragged line; Hollyhocks are plucked from their stems; Pansies are strung into a frieze; rough little Chrysanthemums are stuck up stiff and single. But Roses—it is Roses that are most often attempted and most seldom portrayed. Years ago we complained that they were always too hard; now things have changed—they are almost always too soft. Their color has been the sole concern. Achieve this, the painter seems to say, and what matter though they look as if made of a layer of cotton wool without thickness or outline or velvety surface? The worst is that even color cannot be achieved unless texture at least is given; we may match the tint of a Rose-petal in cotton wool, but the two tints will not be the same. When, from time to time, we find evidence of an eye that has seen the whole beauty of a flower and a hand that has had the skill to render it, then we are indeed content, though we see nothing more than one Rose on its stalk or two Carnations in a tiny bottle. We are content, although the portrait can hardly be called a picture, just as when, on the other hand, we find a beautiful picture we are content if it only indicates the beauty of the flowers that inspired the painter. To ask for everything together is to ask what only the greatest masters of the brush could give us. Indeed, it is doubtful whether any great master has ever given us, could even give us, a canvas in which we should have perfect pictorial beauty of an impressive kind, and perfect portraiture of flowers as well. Yet nothing is easier, thinks the amateur, than to paint flowers.

An Old New England Bridge.

THE bridge of which we give a picture on page 215 is on the old Boston and Newburyport Turnpike, and spans the Ipswich River at Topsfield, where for fifty years it has borne witness that such a structure can be at once rustic and monumental looking, that it can show the most evident solidity and yet harmonize perfectly with the natural aspect of the shores between which it stretches.

There is nothing about this bridge to show whether it stands in New England or in Old England, and it would look as thoroughly at home in any country where stone of a similar kind can be found. The semicircle is the simplest of all arched forms, and is certain to be selected by primitive or rustic builders; the comparatively shallow voussoirs, as small as is compatible with safety, are likewise characteristic of men whose desire is to build as cheaply as possible, and who think of security rather than monumental effect; and the irregular shape and rough surface of the other stones, and their association without mortar, tell a similar story. On a small scale it is the same sort of a wall that we find in the so-called "Cyclopean" structures of primitive Greece. And work of the same sort is still seen in the farm-walls of all parts of New England where there are granite ledges to be easily split. There is no reason why bridges of just this character could not be built everywhere in these districts to-day; and our picture is sufficient proof of the desirability of building them.

A dozen miles below Topsfield, at Ipswich, is the more famous "Choate bridge," which was built about 1760, and whose stone arches are still as sound, and a great deal more beautiful, than when they were first erected. The Black Willow, the White Maple, the Red Ash and the Swamp White Oak here fringe the banks of the Ipswich, and make them interesting, but the beauty of the river scenery is heightened by these solid spans of time-colored stone. And yet to erect them nothing was required but the unskilled labor of country masons, guided by the instinct of some one who knew the practical and artistic value of the simple round arch and the massive wall.

Our illustration is from a photograph by Rev. E. C. Bolles, D.D., of this city, to whom we are indebted for its use.

In a California Cañon.

ASPECTS of out-door life in California have often received literary treatment in the broad way, and on a large scale. Yosemite and Shasta are known, and the forests of giant Pine, close-carpeted with trailing Ceanothus, and the mountain acres brilliant with Calochortus blooms. But many a Californian can leave a thickly settled valley of orchards and find himself, in ten minutes' walk, in a flower-crowded mountain cañon, flooded with April sunlight, and stirred by all the springtide sounds and pulses. Perhaps Thoreau would have thought this as wonderful and satisfying as to dwell in the remote fastnesses of those Sierras that King, Whitney and Muir have so finely revealed.

The cañon I have just visited is one of the many small ones in the Coast Range on the eastern side of the Santa Clara Valley, sloping west. The sea-winds rise and pass over them, and the fog drifts through the deeper river-cañons, so that these short, steep ravines are warm and sheltered, full of early pasturage and bloom. Their charm is in their nearness. A hundred yards from the wide wheat fields and the closely tended orchards of Apricots, Peach, Prune and Cherry, now in the full current of bloom, carries one into the mouth of the wooded cañon, which rises sharply, with little turns and pauses, to the outer crest of the Coast Range. If one goes quite to the top, it is only half a mile, and a broad rolling mesa with hill-tops rising over it extends several miles and then descends to another valley. The cañon consists of just this wooded, steep half mile of ravine, and its flower-covered sides sloping to the north and south. There are thousands of such cañons in California, and thousands that are much larger and more imposing, but not more interesting to the lover of hills and trees.

There were flowers in bloom all winter in the sunny shelters of this cañon, not many, to be sure, but a few flame-colored Eschscholtzias, the brilliant California Poppy and golden Mustard, and the wild Pea by the brook. A month ago, even this rainy and late season, the Larkspurs began to bloom on the yellow shale in sheltered spots. The grass has been growing everywhere since the first rains, and now, in these early days of April, it is knee-high in many places, and the heads of Wild Oats are half out of their sheathes. It is a tangle of growth from the mossy rocks by the water's edge to the windy summit of the hill.

The place is locally known as "Morrison Cañon," and the little stream is Morrison Brook. At every step on the way up its course, except when one is hidden under the great Oaks and Maples, the slightest backward glance reveals the sloping width of the orchard-planted valley, the Bay of San Francisco and the purple San Mateo Mountains beyond, filling up the whole western horizon.

First, at the foot of the hills, between the Almond-orchard and some one's vineyard sloping south, where the brook crosses the lane, bordered with Willows and Sycamores, one finds early blue and white Nemophilas in clusters in the grass, one or two plants in a place. There are brilliant masses of glowing Eschscholtzias, and above on the hill-side blue and purple Larkspurs (*Delphinium simplex*), and saucy Dodecatheons. The cañon begins, as most of them do, in well-pastured slopes, but the bottom is full of Live Oaks, just in bloom, Maples with leaves half grown, and Sycamores, Horse-chestnuts and Alders, all in the first rush of spring.

Pretty soon, as we go on, the hillsides are seen to be covered with patches of color, in acre-wide splashes. Here and there are Buttercups (*Ranunculus Californicus*), far more firm in texture than those of New England, and lasting a week or so in a flower-vase. There it is the pretty purplish blue Gilia (*G. multicaulis*), mingled with the white *G. dichotoma*, and Clovers, with half a dozen little *Cruciferæ* and *Compositæ* that make up in numbers for what they lack in individual glory. Clumps of the scarlet Painted Cups (*Castillegia foliosa*) illumine the hill-side. This fine perennial often has forty or fifty heads on a single plant, and blooms most of the year. It grows in clumps with the lovely red stemmed, "Rock-brake" Ferns (*Pellæa andromedæfolia*) that dot the warm hill-sides. Such clusters as they make, too, in this old-fashioned district, where even the children are careful not to destroy the roots! You gather all you care to carry from one or two clumps.

Since one has begun to seek the Ferns, a step below the path into the shelter of the trees and rocks reveals the Gold Fern (*Gymnogramme triangularis*), which children love to gather and press on cloth to leave the pollen-stamp of dusky yellow. Still further down the ravine at the bottom of the cañon the Gold Fern is more abundant, and with it, in moist, mossy crevices of rock, are young pink-tinted and emerald fronds of the delicate *Adiantum emarginatum*. On the northern slopes are tall Chain Ferns (Woodwardias) and taller bracken. There are white and purple Trilliums there, too, and spicy-scented Wild Currants (*Ribes tenuifolium*) just passing out of bloom, while higher up a mass of Holly-leaf Cherry (*Prunus ilicifolia*) is just beginning to flower. Somewhere about here there is a Cercis-tree that ought to be well in blossom, and the pretty Wild Gooseberries are abundant. *Ribes Menziesii* has a little whitish flower, and after a while a prickly, oval, red berry that children like. *Ribes divaricatum* has round, smooth, black berries, really excellent and worthy of cultivation.

On the hill-sides, close to the fragrant new-budded Oaks, are massive, semi-tropic plants of the Balsamorhiza, with its many-flowered yellow heads. Near them are groups of rose-

colored Wild Onions (*Allium unifolium*), and thousands of the blue-flowered Camass (*Camassia esculenta*), which once was one of the most common growths of the valley, eagerly dug up by grizzlies and by Indians. In the opens, near the trees, creeping along the ground or clambering over bushes, one finds the white Star-flowers and graceful leaves of the great Man-root (*Megarrhiza Californica*), whose large, prickly balls, filled with seeds and soapy pulp, are gathered by the country boys to throw at each other in imitation of snow-ball fights. Along in these opens, on the slope, one finds the purple and yellow *Fritillaria lanceolata* now, and more or less all summer. Vines of the common Clematis (*C. ligustricifolia*) cover some of the Oaks and Sycamores. The delicate white Star-flowers (*Tellima heterophylla*), one of the Saxifrages, grow in these fringes of the wooded part of the cañon.

Higher up the hill-slopes, but still not far away, are yellow, wild Violets (*Viola pedunculata*), with their brown backs and habit of clustering in colonies, a few yards across. This beautiful plant has been naturalized in some of the valley gardens, where the flowers are often as large as a quarter of a dollar. The sweep of grass over the rounded hill-top is cream-white for acres with the fragrant Cream-cups (*Platystemon Californicus*) and flame-red with Poppies. In places the Orthocarpuses, such as the purple and white *O. purpurescens*, mingle with white and blue Lupins, Gilias, Phacelias and the white and pale magenta Collinsias, to make a dazzling patch-work. Some of the most effective *Compositæ* of the Coast Range-region seem somewhat lacking in this particular cañon; but the rare flowers, becoming scarce elsewhere, are still massed almost as abundantly as twenty years ago. The broader slopes of the mountains show tints of white, yellow, scarlet, purple and blue from the valley below, and many species of plants contribute to the effect; but Buttercups, Eschscholtzias and Castillegias certainly cover the widest areas. It seems as if a thousand children might gather posies on the pastures that slope to this one cañon without lessening their brilliant colors.

Niles, Cal. *Charles H. Shinn.*

Vegetation in Southern Alabama.

LATE in February I wrote to Garden and Forest, giving some account of the vegetation here which showed that it was much farther advanced than was usual at that season of the year. Soon after—that is, in the early days of March—a norther swept over this region during the prevalence of which the mercury fell to twenty-four degrees, Fahr., and of course proved destructive to many tender plants. In observing the damage inflicted upon the various forms of plant-life in the garden, the field and the forest, it is interesting to note the variety in the injuries sustained by the plants which were overtaken by this cold blast when they were in their most active growth.

Of the ornamental trees and shrubs from the tropics and most of the plants from sub-tropical regions, considered hardy with us, all were more or less injured, but only a few were killed outright. Of the more tender kinds, the Cestrums, Brugmansias, some of the Lantanas, such as *L. Camara* and its varieties and most of the Abutilons were killed to the ground and entirely lost, as also were the Grand Duke and the Star Jessamines (*Jasminum Sambac*, var., and *J. pubescens*). The following had the younger branches killed and were stripped of leaves and flowers: *Rhynchospermum jasminoides;* the China-berry-tree (*Melia Azederach*); Crape Myrtle, *Lagerstræmia Indica;* Oleanders, the white being the greatest sufferer; *Hibiscus mutabilis; Plumbago Capensis;* Pomegranate; *Magnolia fuscata* and *Sterculia platanifolia.* Only the three last species are producing a new set of flower-buds.

Of the woody plants of the same category, the following escaped almost unhurt, receiving no check in the progress of their vegetation: *Pittosporum Tobira*, Azaleas, various Viburnums, at the time more or less with open flowers; *Laurus nobilis*, Cape Jessamine (*Gardenia floribunda*), the sweet-scented golden Jessamine (*Jasminum odoratissimum*), Hydrangeas and all of the Indian or Tea Roses, which had in some localities their flower-buds injured, but were soon producing again an abundance of flowers. *Cycas revoluta, Zamia integrifolia* and such exotic conifers as Biota, Retinospora, Cupressus, Araucaria, Cunninghamia, Podocarpus, were not in the least damaged. Of the bulbous plants, many of them far advanced, the true Lilies were cut down; Amaryllis, Gladiolus, Alstrœmerias, Zephyranthes were but slightly injured and are at present in full flower.

The greatest injury was inflicted upon fruit-trees. The branches of the Orange were killed to the larger limbs; the Japanese Medlar suffered severely—the young, tender wood of the branches and the greater part of the foliage is dead. Covered with the blackened, shriveled fruit and the dead leaves, this tree presents a sorry sight. The Fig crop will prove a total loss, and that of the Pecan has been cut down to a very great extent; all the youngest shoots and the flowers and leaves, just emerging from the cover of their winter bud-scales, having been killed. The Japanese Persimmons or Kaki in my garden are killed to the root.

Strawberries received but a slight check, from which they soon recovered. Protected by a slight covering of straw, they continued to produce their fruit, and shipments to northern markets were but little interrupted. The damage to the products of the vegetable-garden and the truck-farm was not as great as was first anticipated, although the comparatively small proportion of the crop of Irish Potatoes already above ground is entirely lost, and so is the crop of Peas, from which shipments to northern markets had just begun.

The deciduous trees of the forest were stripped of their new foliage, and a fortnight after the frost they still presented the bald and sombre aspect of midwinter. Among the Oaks, the shoots of this season, with the flowers and foliage more or less advanced, were destroyed in the following species: Spanish Oak, Post Oak, Upland Willow Oak or Blue Jack, Turkey or Barren Oak (*Quercus Catesbæi*), Water Oak, Laurel Oak and Willow Oak (*Q. Phellos*). The Live Oak escaped all injury, and the various Hickories, with the exception of the Pecan, were found to have received no damage. The Cherokee Rose is covered anew with a second crop of flowers. The Pines and other coniferous trees of this section, which at the occurrence of the frost were either just past flowering or in full flower, do not seem to have sustained any injury.

Mobile. *Carl Mohr.*

New or Little Known Plants.

Ligustrum Sinense.

THE illustration on page 213 represents a branch of the Chinese Privet gathered last November in Parsons' Nursery, at Flushing, near this city, and serves to show the value of this plant for the autumn decoration of gardens. *Ligustrum Sinense*, although it is by no means a new plant, is not very often seen in gardens, and it gives us therefore a good deal of pleasure to find it flourishing in this climate. The number of plants which retain ornamental fruit on their branches until the beginning of winter is not large. Such plants, however, are very valuable in this climate and it is desirable therefore to add as many to the short list as possible.

This Ligustrum, as it appears at Flushing, is a loose-growing shrub, six or eight feet tall, with slender branches covered with light gray bark. It is no doubt an evergreen in a milder climate than this, or holds its leaves until spring, at least, as there was a large part of them on the Flushing plants at the time of our visit, and they were still bright and fresh.

The fruit is small, but of a beautiful dark color, and is produced in the greatest profusion on all the upper branchlets of the stems, which thus appear to end in great terminal racemes of berries, one or sometimes two feet long and a foot or more broad.

A flowering branch of this plant was figured in 1878 in the *Gardeners' Chronicle* (n. ser. x., 964); but it is the fruit and not the flowers which is its chief beauty and makes it a desirable plant to cultivate.

Foreign Correspondence.

Covent Garden, London.

COVENT GARDEN, or "Cummin Gardin" of the costermonger, and "Mud-salad Market" of *Punch*, is one of the sights of London which visitors are recommended by the guide-books not to miss, but which few ever see as it should be seen. Whilst the rest of London is sleeping, Covent Garden is all life and bustle, for the market begins at four A. M. All night long, carts, vans and wagons, piled with hampers, boxes, cabbages and garden-produce of all kinds, are rumbling along the many streets which converge at Covent Garden. They come from the suburbs of London, from the wharves and from the railway-stations bringing the produce, not only

of English gardens, but of Germany, France, Holland, Italy, Australia and America, for sale in this market. Thousands of tons of vegetables, fruit, plants and flowers are brought here, sorted, sold by auction or otherwise, and taken away again on almost every day in the year.

Covent Garden is within a stone's throw of the Strand, which runs equidistant between the market and the River Thames. It is not far from Westminster Abbey, of which it once formed part of the grounds, Covent being a corruption of convent. The Convent Garden, "an enclosure or pasture browsed by deep-udder'd kine, and probably the haunt of the lark and nightingale." In 1552 it was granted to John, Earl of Bedford, and in 1631 the market square was laid out, and the arcades or piazzas erected. The market was confined to a grove of trees, beneath which the stalls of the dealers were placed for shelter. By the middle of the eighteenth century the market had become important; but it was used for the sale of other commodities besides the products of the garden. In 1830 the numerous wooden sheds and stalls were swept away and replaced by the present market-house. Loudon wrote of this building in 1831: "To walk through this market with the recollection of what it was three years ago, gives rise to a variety of reflections. By what cause has it come to pass that the pillared grandeur and temple-like magnificence, which in former and no distant times were exclusively devoted to the edifices consecrated to the gods or occupied by princes, are now judged appropriate to the scene of humble industry and the abode of every-day people!"

The whole market occupies a space about 400 feet square, or, say, three acres. The buildings consist of a central avenue or arcade, with shops on each side, which are stocked at all times of the year with the choicest and richest fruits and flowers. These are open all day. Parallel with the arcade on each side is a spacious glass-roofed hall 200 feet long, sixty feet wide and fifty feet high. These again are flanked by the shops and offices of wholesale dealers and agents. Auction sales are held here daily at ten o'clock, and from soon after midnight crowds of porters are engaged in transferring from the vans outside packages of all kinds and from all directions. Huge cellars below all the buildings and passages afford storing accommodation for vegetables and fruit which are not for immediate sale. Hundreds of bunches of bananas and pineapples from the West Indies are stored here to ripen. Above the shops there are more storerooms. Four staircases lead from the central passage to a range of conservatories stocked with aquatic plants and animals, foreign birds of all kinds, hardy plants, principally conifers, in pots and tubs, with other garden material, all calculated to delight the dweller in town and tempt him to buy.

The roads surrounding the markets are broad, for the convenience of the large vans which in the morning block the way. The flower-market is a handsome structure, which was erected in 1885 to meet the enormous increase in the wholesale trade in this department. It covers an area of about 150 feet square and fifty feet high. A broad central path and numerous narrower side-paths divide the whole into plots, upon each of which is a cast-iron stage with three tiers, the top one eight feet from the ground. Upon these the plants and flowers are arranged. The space is let in lengths of ten feet, the name of each holder being over his stall. This space is rented at the rate of one shilling and threepence per square foot per annum. Even this market is not nearly sufficient to hold all that is brought by the London market-gardeners, for whose exclusive use it is kept, and outside there are numerous vans from which the flowers and plants are purchased direct. This is probably the handsomest and best arranged flower-market in Europe, and it is the depot of the very best of flowers and flowering plants that England can produce. Every

Fig. 56.—Ligustrum Sinense.—See page 212.

morning by four o'clock the stalls are crammed with the choicest of what is grown by the London market-gardeners, and by nine o'clock, or even before, it has all gone, and the market is closed.

The Duke of Bedford receives from rents and toll levied on all goods brought to the market something like £20,000 a year.

Covent Garden is the principal of the three markets in London where garden products are sold. A large proportion of the daily vegetable and flower requirements of the four million inhabitants of this great city is distributed from here. The wealthy proprietor of a West End flower-establishment, the humbler green-grocer and florist, the crafty costermonger and the poor flower girl all come here for their daily or weekly supplies. The streets are crammed with vehicles of all kinds either discharging or loading; gangs of men are rushing to and fro with loads of baskets or boxes, and for about five hours all is bustle and noise. Gradually the vehicles get away, the noise of the workers decreases, until by nine o'clock, or about the time when the comfortable Cockney comes down to breakfast, the market is over, and Covent Garden has assumed its daily quiet. Few who see it in the day have any idea that in the small hours of the morning this small corner of London was alive with busy men and women, and almost every foot of the square and adjoining streets was packed with loads of fresh vegetables and flowers "all a blowin' and a growin'."

London. *Visitor.*

Cultural Department.

Pruning the Peach.

THE fruit-buds of the Peach are this spring quite generally killed by frost. Opportunity is thus afforded to prune the trees, by which matured Peach-orchards may be benefited. It may be best done on what may be styled the "renewal system" of pruning. This means to remove the entire head of the tree.

It is the habit of this tree as it enlarges its growth to set the bulk of its fruit at the extremities of its branches, which are often broken by its weight. As Peach-orchards are usually managed, or mismanaged, a full peach crop generally causes the ruin of many of the trees. After a bountiful harvest a Peach-orchard sometimes looks as if a tornado had swept through it. We see naked stumps of Peach-trees from which all the limbs have been torn by the burden of an excessive crop of fruit. This may be Nature's system of pruning the Peach, but from observing it many years ago I learned to improve upon Nature by the practice of a more orderly style of pruning.

After the growth of the Peach-tree starts in April, and the leaf-buds have opened, saw off all of the limbs of the tree to within, say, two feet, or even less, of where these branch from the trunk. The tree will then form an entire new head, and in one season make a growth of six or eight feet of new wood which will set fruit-buds and may bear fruit the next year. I have thus renewed and re-renewed an orchard of twenty acres of Peach-trees, securing by this treatment finer fruit, which was more easily gathered, and securing the trees from damage by breakage of limbs from the load of a crop. After the trees have borne two or three crops, and their branches become elongated, pass through the orchard, shortening in the heads, as above described, of alternate trees in the rows. The next spring do the same to the trees left unpruned the year before. The orchard may then be allowed to grow as it pleases for some years, after which the tree-heads may be again shortened in alternately as before.

The Cherry and other stone fruits may be similarly treated, with advantage to the tree and great improvement of its product. This tree-pruning should be deferred until growth has fully started in spring—from April 20th to May 20th. If the tree be thus headed in during winter, or while its vitality is dormant, it may never awaken into life; but its branches may be all removed after vital action is begun without harm to the vigor of the tree. In fact, it is a good rule to practice all kinds of pruning when a new growth has begun to develop. Many horticulturists consider it imprudent to thus remove all of the limbs of a tree at one operation. They argue that it may give a shock to the tree's growth, from which it may not recover; therefore it is generally advised in top-grafting to remove a portion only of the branches at once, deferring removal of the rest until the next year. Such has not been my practice. In forming a new head to the tree by pruning or by grafting I have invariably made an entire decapitation at once, and during the past forty years I have found this practice always satisfactory.

Vineland, N. J. *Alexander W. Pearson.*

Grapes for Everybody.

MR. WILLIAMS' list of Grapes is so good that I feel inclined to add some notes from another soil and climate. I should, for general planting, exclude Cottage entirely and Moore's Early almost wholly, and would moreover advise every one to plant Worden alone for a black grape. I see no reason for planting Concord any longer. Worden is equally hardy and prolific, and is of better quality. It is sweet as soon as colored and hangs well on the vine. It is a capital keeper, much better than Concord in this respect. It has the thin skin of the Concord class, but does not break so easily. A cross between Herbert and Worden would be nearly perfect. Why, then, shall we not adopt Worden as for the present our ideal black early Grape? For late black I would place Herbert ahead of Wilder and the rest. But if a really very early black Grape must be had, Moore's Early is so far our best with me.

For red grapes I agree in selecting Brighton if planted with other vines to supply pollen. But next to it I should name Gærtner, one of Rogers' hybrids not at first appreciated. Lindley is a fine Grape, about as good as Massasoit, which Mr. Williams does not mention, and not quite as early. I should make my list of reds Brighton, Gærtner, and Salem, I think.

For white grapes I do not hesitate to take Diamond for the head of the list. I think it is sufficiently tested and by the best judges in all parts of the Union. I have not seen one severe stricture on its quality, growth, habit or bearing qualities. Lady, at last, I am compelled to discard. It yields no crop to speak of. It is my ideal grape in quality, but it will not prove itself even a decent vineyard grape for cropping. Niagara I class with Diamond. But Hayes is very fine indeed and perhaps we shall learn to rank it first or second, for Niagara mildews very easily. Duchess I should not hesitate to include in the list, were it not tender. It must be covered; but in quality it is delicious. Pocklington is a grand grape when dead ripe, but it is too often sold and eaten when only half ripe. Empire State is nowhere near as good as it ought to be. Martha, if thinned sharply, is fine; otherwise, poor. I make my list of white grapes Diamond, Hayes, Niagara and Duchess.

Now for special purposes there is another list necessary. Iona is unequaled for a red grape if protected. Goethe, if well placed in a sunny spot, is also delicious—late and a grand keeper. Jefferson, if well ripened, is superb. For arbors, barns, etc., August Giant is a remarkably rampant grower, prolific and quite a good grape. Eldorado is a fine grape, unsuited for general planting, but a vine or two deserve a place. Mr. Campbell, of Delaware, Ohio, will offer us before long some new hybrids, some of which by his favor I am testing. I am inclined to think our progress in grape improvement is nowhere near its end. The points already achieved are size, prolific bearing and hardiness. We should work to eliminate seeds largely. Most of the Rogers' hybrids are very seedy; Jessica is little else. Diamond is a great improvement in this direction. Iona, with its small seeds, is nearly perfect in all points but in hardiness. Goethe is the nearest approach to the hot-house grape, but it is too late for the Northern States, except in very favored spots. Let me add that success with Grapes depends more than all else on a high, well drained soil.

Clinton, N. Y. *E. P. Powell.*

The Babianas.

THE Babianas are a very pretty genus of bulbous plants, natives for the most part of the Cape of Good Hope; they all have long and narrow leaves, folded lengthwise like those of some Palms and covered with fine hairs, except the small species, *B. Socotrana*, whose leaves are smooth. They are of very easy cultivation, needing to be potted in September in a light soil and to have plenty of water, sunlight and air. The temperature of an ordinary greenhouse is sufficient for them. Thus treated they will be in flower in February, and being from their plaited leaves and the color of their blossoms unlike other Cape bulbs, they furnish an agreeable variety and never fail to attract attention.

Like most bulbs from the same country they are hardy enough to do well in a cold frame if there is not room for them in the greenhouse, and so treated they flower very finely, but at a time when Scillas, Narcissi and Muscaris are plentiful. I have a long row of them now (April 21st) about five inches high in a frame, which in about two weeks will be in blossom.

There are about twenty species known to science, some of which are not in cultivation and many of the others not to be had of ordinary dealers; for even the Dutch wholesale dealers and growers can supply only four or five species at the most, and those often incorrectly named; the remainder of the "fifteen most beautiful sorts" offered in their catalogues are

seminal varieties of *B. stricta*. The only way known to me of obtaining the greater part of the true species of this and other genera of Cape bulbs is to order them from the sales division of the Cape of Good Hope botanic garden, which by the niggardly policy of the government is compelled by this means to make up for a miserable half-appropriation.

B. sambucina is one of the best species, horticulturally speaking; its flowers are large and showy, purple with a dark line traversing each division of the flower. It is strongly perfumed with the fragrance of the Elder, and like many other species, produces auxiliary bulblets. *B. spathacea*, *B. tubata* and *B. tubiflora* are very curious and interesting when in flower, but the blossoms are inconspicuous and produced on very short stalks, so that the plants frequently bloom unobserved by those who pass them daily. The flowers of these three species have tubes four inches long and their colors are straw or cream or faint purple. *B. disticha* also has light colored flowers, produced on spikes six or eight inches long, and the plant is well worth growing. *B. plicata* with large purple and yellow flowers is one of the finest kinds.

Mr. Baker considers the plants known as *B. villosa*, *B. rubro-cyanea*, *B. obtusifolia*, *B. purpurea*, *B. sulphurea* and *B. plicata* mere varieties of *B. stricta*, and I know from experience that some of these may be raised from the seed of that species. Some of these forms are very beautiful. *B. plicata* is white or nearly so; others have the divisions of the flower alternately white and purple or yellow and purple; another is very dark purple with black blotches. *B. rubro-cyanea* is a very striking flower whose colors are blue and crimson, much like those of *Geissorrhiza Rochensis*. The genus is said to be named from the Dutch word for baboon, because the animal feeds upon the bulbs of these and other plants.

Canton, Mass. *W. E. Endicott.*

Bertolonias.

THE Bertolonias form a group of beautiful small-growing stove-plants, their simple ovate or obovate leaves being remarkably attractive on account of varied colors and markings. The flowers are not of any special value, the chief beauty of the plant being found in its foliage, and unless seed is desired it is best to pinch out the flowers as they appear, as their perfection is usually attained at the expense of the foliage, which suffers both in size and vigor if the flowers are allowed to develop. The Bertolonias luxuriate in a warm, moist house and should be well shaded, as the foliage is too tender to endure full sunlight. They are readily propagated from seeds, or from cuttings, which root freely if placed in a good bottom heat and kept rather close for a time under a bell-glass, say, or in a propagating frame. Plants from seed require somewhat similar treatment, but need a little watching when quite small, because much moisture on the foliage causes them to damp off. *Bertolonia marmorata* is an old favorite, and, though not quite so showy as some of the more recent introductions, yet is well worthy of cultivation. It has ovate, slightly hairy leaves of a light green color, and variegated with irregular markings of white, the under side of the leaves being purplish. This plant has also been known as *Eriænema marmorata*, and is a native of Brazil.

Bertolonia margaritacea is another excellent sort, and, though very pretty as an individual plant, is more effective when several are massed in a pan, which is decidedly the best way of growing for exhibition. *B. margaritacea* produces leaves from four to six inches in length, olive green in ground color and ornamented with lines of pure white spots.

B. superbissima, while resembling the last named in some particulars, is even more beautiful, the spots on the leaves being bright pink and the under surface being uniformly colored with a similar tint.

But the gem of the genus is a hybrid of garden origin, *B. Van Houtteana*, which has the largest foliage and the brightest variegation as well. This consists of streaks and dots of purplish pink or magenta, which contrasts effectively with a ground color of olive, and forms a combination seldom equaled among variegated plants. These four varieties would make a good beginning for any one who wishes to try this class of plants, though several others may be added to the list if desired—for instance, *B. guttata*, *B. Mirandæi*, *B. Marchandii* and *B. vittata*, all of which are good.

Bertolonias prefer a light, open soil of equal portions of peat or leaf-mould and loam, with enough sharp sand to make the compost open and easily drained. The pots or pans should be well supplied with drainage material, and the plants liberally watered, though it is advisable to keep the water off the leaves as much as possible, and especially so during the winter.

Holmesburg, Pa. *W. H. Taplin.*

Bridge at Topsfield, Massachusetts.—See page 211.

Hardy Plants for Cut Flowers.—II.

A MOST useful spring-flowering plant is *Trillium grandiflorum*, the best of the genus, owing to the size of its flowers and their pure white color when first opened; this, however, turns to purple with age. *T. ovatum* and *T. stylosum* are both good, and also white. Trilliums usually appear to the best advantage when well established, and this is usually the second or third year after planting. They thrive best in a shady position, and a virtue may be made of necessity by

planting them under trees where other things would not succeed. For naturalizing in such places Trilliums are invaluable. If the growing of hardy plants under glass were advisable, Trilliums might be so treated and flowered a month earlier, as is often practiced in England. But, as a rule, plants that are thoroughly hardy are more enjoyable when flowering at their own sweet will than when forced into attenuated and premature bloom under glass.

Doronicums have lately come into favor for cut flowers, and justly so. They are not only well adapted to this purpose, but they rank among the choicest of early summer border-flowers. We have tried five species and varieties, all of which are perfectly hardy. *D. Caucasicum*, *D. plantagineum excelsum*, and, where it will thrive, *D. Clusii*, are three of the best sorts. Of the variety Harpur Crewe we have had no personal experience. Regarding the culture of Doronicums, one thing should be borne in mind—they do not like any soil other than that of a retentive nature, and this was noticeable even in a summer like the last.

With the first appearance in April of its elegantly cut foliage, *Dicentra eximia* commences to bear deep rose-colored, nodding flowers on stems a foot long, which may be gathered from April to the end of October. *D. eximia* is a native of the southern Alleghanies, but it is perfectly hardy, and without the disagreeable odor so noticeable in others of the genus. There are few other hardy plants that flower continuously six months of the year. *Helenium Hoopesii*, another native plant and a composite, is a showy and useful border-plant, not so well known as it should be. *H. Hoopesii* grows two feet high, and bears numerous bright orange, Daisy-like flowers in early summer; its culture is of the simplest; any ordinary border-soil will suit it. *Daphne Cneorum*, though not a herbaceous plant, is usually included among collections of such, and certain it is that there are few plants so worthy of being in every garden, both for the fragrance of its blossoms and the freedom with which they are produced nearly all summer. We have noticed, however, that this Daphne is a trifle more exacting than many other plants as to the soil it is to be grown in. We are told that it is indigenous to southern Europe among rocks, in gravelly soil with plenty of humus, and it will be found that if, when planting *Daphne Cneorum*, this is borne in mind, and anything approaching a heavy, wet soil avoided, the plants will grow rapidly with no further attention, and yield abundantly its delicate pink blossoms. The Trollius, or Globe-flowers, resemble gigantic Buttercups, and flower in the early days of summer. *T. laxus* is common in wet meadows in the Eastern States, and is well deserving of cultivation. The sepals of this and the next species are concave, forming a kind of globe, hence the common name. *T. Europæus* grows a little taller than the last, and is usually eighteen inches to two feet high, and has very large yellow flowers. *T. Japonicus* has bright orange colored flowers, and is a distinct species. The above three form a pretty group in a moist soil in the open border. We have found that Trollius-seed sown under glass, and carefully protected, does not germinate in two years. The next seed was sown when gathered, and was well frozen in a frame in winter, and it germinated promptly with the coming of warm spring weather. These remarks apply to many other seeds, such as those of *Anthericum Liliastrum*, *Gentiana acaulis*, *Gillenia stipulacea* and *Allium Karatavience*.

Passaic, N. J. *E. O. Orpet.*

Notes on Wild Flowers.

Asarum Virginicum (Wild Ginger), which has been in flower for more than a week, is a valuable plant for a shady location. The flowers are not conspicuous or showy, but the foliage is very pretty, and it endures through the winter, appearing as fresh in early spring as at any season. The leaf, nearly round-heart-shaped, is shiny above, often mottled with white, and of a thick, leathery texture. The plant is hardy, easy of culture and conspicuous in early spring because of its fine foliage. It is a native of Virginia and other southern States around and among the mountains. *A. arifolium* is another species from the south with much the same kind of foliage, but not so thick as that of the former. The leaves are larger, halberd-heart-shaped, dark green, often blotched with white or lighter spots. They endure through the winter, as do those of *A. Virginicum*, and should be grown in the same location.

Few of our native plants reward the cultivator more bountifully than the Hepaticas (*Anemone Hepatica* and *A. acutiloba*). Both are hardy, are not difficult to grow, and give a profusion of flowers of various shades and colors in early spring when there are but few other plants in bloom. The foliage is also fine on strong, well established plants and endures through the winter. Hepaticas can be grown in the shade where most plants would not thrive, or in a fine loamy soil they do well in full sun light.

The Pasque flower (*Anemone patens*, var. *Nuttaliana*), just flowering, is one of our finest native Anemones. It is a native of the western prairies, but thrives well in any moist, well drained soil in the sun. Its earliness makes it the more valuable. In strong, well established plants the flowers are three inches wide, light purple or almost white in color. They open in the warmest portion of the day and close at night, and endure for several days. They appear before the leaves, and a bed of these plants has a strange appearance when covered with large, erect flowers without foliage.

Southwick, Mass. *F. H. Horsford.*

Orchid Notes.

Maxillaria lepidata.—In a descriptive note on this Orchid (see page 127), Mr. M. Barker asks if the plant he describes is the same as what is grown at Kew under this name. His description might have been made from the Kew plant, except in regard to size, the latter being a large one, over a foot across; it flowers freely every year in March. Lindley's description, referred to by Mr. Barker, appears to have been made from imperfect material, but he used the word *acaulis* as indicating the section of the genus to which *M. lepidata* belonged—*i.e.*, those species characterized by the pseudo-bulbs being clustered, and showing no distinct stem or rhizome. To this group belong all the best of the garden Maxillarias—namely, *M. luteo-alba*, *M. grandiflora*, *M. nigrescens*, *M. picta*, *M. venusta* and *M. Sanderiana*. All these have ovate pseudo-bulbs, large strap-shaped leaves and erect one-flowered racemes.

A second group has the flowers in short, compact racemes, and is represented by *M. hyacinthina*, *M. leontoglossa* and *M. elongata*. These have lately been removed from Maxillaria into a separate genus—namely, Xylobium. The third group includes all those with distinct rhizomatous stems, such as *M. variabilis* and *M. purpurata*. Altogether there are about 120 species of Maxillaria known, but only a few of them are of any value as garden plants.

Angræcum citratum is one of the prettiest of small Orchids. It has short, tongue-like, bright green leaves resting on the soil, and, springing from their axils, the most elegant spray-like spikes of flowers, some spikes being a foot long. The flowers have long spurs and a flattened arrangement of the segments, which are nearly an inch across; their color is a pale cream, almost white, with a pale bluish shade on the labellum. They are arranged in two perfectly straight rows, one on each side of the spike, and they are so pure, so elegant, and, withal, so lasting in freshness, that we know of no plant, Orchid or other, with which to compare them. The species is a recent introduction from Madagascar.

Kew. *W. W.*

Heuchera sanguinea.—Lovers of beautiful rock-plants will be pleased to learn through Mr. Orpet's note of the hardiness of this plant. I have still further evidence of its hardiness. Seedlings raised during 1887 withstood the winter of 1887-'88, which will be remembered as a severe one. Considering the ease with which this plant may be propagated, it should become common, and be sold cheaply for forcing, for which it is as well adapted as the common *Astilbe Japonica*. Seeds sown as soon as ripe and wintered in boxes in a cold frame come up early the following spring. I have adopted this plan of sowing seeds over winter with much success, especially with slowly germinating species of Columbines. *A. glandulosa*, if sown in this way, germinates freely and is just as easy to manage as any of the common kinds, while if sown in spring sometimes three-fourths of the seed will lie over, or come up stragglingly all summer.

Gromwell.—I am also pleased to be able to record the hardiness of the Gromwell, *Lithospermum prostratum*, a trailing, semi-shrubby Boraginaceous plant, with pretty blue flowers, exceeding in intensity of color the Forget-me-not, and rivaling the Virginian Cowslip, *Mertensia Virginica*. This plant is easily propagated by soft-wood cuttings. It will not thrive in a wet place.

Lenten Roses.—We set out a number of these plants in grass under a spreading Hickory last summer after being forced, and were delighted to find all in bloom on April 3d. A splendid effect could be produced by planting in this way some of the fine hybrids like Willy Schmidt, Hofgarten, Inspector Hartweg, Commissioner Benary, Frau Irene Heinemann, *Helleborus colchicus*, *H. purpurascens* and others. I should not care to risk *H. niger*.

Hydrangeas.—It is common to see large specimen plants of *H. hortensis*, but small ones are rare. Few greenhouse plants are so easy to grow and so useful in a small state. Cuttings taken in spring from half matured shoots root readily almost anywhere. Superfluous shoots broken off will sometimes take root on the benches. When rooted they can be planted out-of-doors, where, with abundance of water and sometimes a little liquid manure, they will make nice plants by the fall. They may be taken up and potted into six-inch pots, and if kept cool and moderately dry they will ripen their wood, in which state they may be kept until wanted, say in February, for forcing. A night temperature of fifty-five degrees is sufficient, with abundance of water and a light position.

Wellesley, Mass. *H.*

Seasonable Hints.—Most forehanded gardeners in this latitude are well along with their early spring work and yet those who have been delayed by unfavorable circumstances can still begin with every assurance of good returns for their labor. Where early vegetables are appearing the crops should be thinned out as soon as the plants are large enough. Novices too often forget that each plant requires room for development, and that a square foot of soil will support only a certain amount of vegetable life. Radishes should be thinned until they stand two inches from centre to centre. Beets should stand four to six inches apart; Onions three inches; Lettuce from six to ten inches, according to the size of the variety; Carrots from three to four; Spinach, for the spring crop, three to four inches; Turnips four to six inches. Of course Peas and Beans do not require thinning, while Cabbage, Cauliflower and Celery are to be transplanted, and the first two should stand in rows three feet apart and eighteen inches apart in the row. Stirring the soil should begin as soon as the plants make their appearance. This is not only to pulverize the clods and make all the plant food available to the young roots, to admit air into the soil and to open it so that it will drink in the rain, but it is the only time when the weeds can be successfully subdued. When the weed-seeds have just germinated a little disturbance and exposure will destroy them and make after-cultivation much more easy. Successional crops of Peas, Beans, Lettuce and other vegetables sown earlier should be put in, but it is yet too early to plant Corn, Lima Beans, Melons or any other tender vegetables in the open ground. The conditions of early spring have lingered so long that small fruits may yet be planted. They should be severely pruned, because the rapidly increasing temperature will hurry forward the leaves before the roots are prepared to supply them with adequate moisture. Tobacco dust mixed with half its bulk of insect powder and sifted on Grapes, Currants, Raspberries, and in fact on all the shrubs of the garden which are developing foliage, will help to keep away numerous insect pests. The dusting should be done while the dew is on the leaves.

The Flower Garden.—The season is still young enough for planting hardy shrubs and herbaceous plants, if the precaution is observed to head in shrubs more severely than is necessary earlier in the year. Be in no haste to set out tender plants. Those which are purchased are generally taken from under glass, where they have not been hardened off, and a raw wind or a chilly night will give them a shock from which they will not recover all the season. In selecting varieties, novices should confine themselves to old and well-tested kinds. So called "common" flowers and shrubs have become well known because their merits have been established after years of trial and selection. They are invariably good and effective, and they are usually better than more recent introductions. The testing of novelties is one of the pleasures of gardening, but the experimenter will be disappointed if he hopes that many of these new acquaintances will be as worthy of care as the old and standard occupants of the garden.

Bergen, N. J. *P. O.*

Correspondence.

The Noxious Primrose.

To the Editor of Garden and Forest:

Sir.—Perhaps a few notes on the irritation of the skin by *Primula obconica* may still be in order. The plants on which my observations were made were fully developed specimens, and had been propagated by division of last year's plants—not raised by sowing seeds after the more natural method. About five hours after the work of picking dead leaves and flowers from about a hundred of them, the backs of the hands and portions of the arms began to itch, and a slight swelling of the parts affected was noticeable some five hours later. The swelling disappeared in twenty-four hours, but the irritation was not wholly gone until the seventh day. It was very slight at its most acute stage, while the swelling caused no inconvenience whatever. The application of soap and water to the affected parts hastens and increases the irritation. Moisture appears to aid the injurious propensities of the plant, for it is noticeable that the irritation and swelling are more severe when either the skin or the plant is wet.

A good botanical dissecting microscope fails to reveal any trace of vegetable hairs in the skin after contact with the plants; and this fact suggests the belief that the plant secretes a poisonous fluid. The irritation differs from that caused by minute spines entering the flesh. In the latter case a sharp sense of pain is experienced, and, guided by it, each individual spine may be located; but in the former, larger surfaces appear to be affected. I have consulted with several persons who have grown the plant in quantity, and a few others have experimented at my request, so that I have information concerning its effect on thirty-nine persons. From the facts, I have calculated that about fifty per cent. of those who work among the plants are subject to their peculiar effects. Temperament and complexion appear to be unimportant factors in the matter; but two colored men whom I persuaded to test the plants remained wholly uninjured after prolonged contact with them. The experiences of some white gardeners and florists are similar to those of these two colored men, no amount of contact with the plants affecting them in the slightest degree. The irritation varies in intensity, and in some cases it is extremely slight. It is generally confined to the arms and backs of the hands, but there are important exceptions to this rule. Mr. K. Finlayson, a gardener at Brookline, Massachusetts, had his eyelids affected, though no part of his face had come in direct contact with the plants. He had been cleaning a number of plants, and his hands, he says, which were also affected afterward, may have been brought in contact with the face while that operation was proceeding. Mrs. M. H. Hutchins, a florist of North Cambridge, Massachusetts, had a similar experience. Mr. Finlayson believes that the hairs which clothe the flower-stalks are in some way the cause of the injury, and says: "My belief in this is strengthened when I remember that I can handle all other parts of the plant with impunity." Plants raised from seed appear to be less injurious than those propagated by division of the old plants; indeed, I have yet to find a case in which the irritation can be traced to one-year-old seedlings. Perhaps the hairs grow harder and sharper, or more virulent, as the plants grow older? It is somewhat difficult to get reliable information on this point, as the plants are propagated by both methods and mixed in most establishments. Seedlings do not injure Mr. Finlayson, though he is particularly liable to be affected by the older plants. Some further information on this phase of the question would be very desirable.

Botanic Garden, Cambridge, Mass. *M. Barker.*

Nepenthes and a Gardeners' Problem.

To the Editor of Garden and Forest:

Sir.—Mr. Burbidge's interesting note on the exact climatic conditions in which he found *N. Rajah* and *N. villosa* serves a double purpose. First it proves that I was in error when I stated that *N. villosa* was in cultivation, the plant grown in gardens under this name being, as he points out, *N. Vietchii*.

In the second place, the particulars given by Mr. Burbidge in regard to *N. Rajah* form, when placed by the side of what was stated recently in Garden and Forest (see p. 108) and what I have since learned in England in relation to the cultivation of this Nepenthes, the strongest possible testimony to the truth of the statement that botanical science (including, of course, geographical botany) affords little information as to the best methods of cultivation for many plants. It is clear from what Mr. Burbidge says that in a state of nature *N. Rajah* grows only at high elevations and in conditions such as he says clearly indicate that under cultivation a lower temperature is necessary for this species than for the others. Mr. Moore's own story of his success with this plant, as quoted by Mr. Barker in Garden and Forest (see p. 146), proves that cool treatment is not disagreeable to it. But it appears now that while we here have been struggling to overcome the difficulties at first attendant on the cultivation of *N. Rajah* (it is just possible that some knowledge of the natural conditions put most people here on the wrong tack!) you in America have had it "flourishing for several years in stove-houses along with other Nepenthes, forming pitchers freely and flowering, no trouble having ever been found in its management."

Truly there is a great deal more to be got out of this question of cultivation versus nature than we have seen yet. I learn from Messrs. Vietch that although they could not manage *Nepenthes Rajah* anyhow when they first received it, yet now they find no difficulty in making it grow and pitcher freely in the same house which contains the general collection of Nepenthes, and where when tried a few years ago it obstinately refused to grow! This behavior is not an uncommon occurrence with new introductions. Of course we must believe that some essential condition had been absent when failure was the result, and had been included by accident when success was attained.

A comparison of the plants grown by a market-grower in his "rough and ready way" with those of the same kind produced in well equipped gardens generally places the former a long way first. The market gardener has hit upon the conditions essential to the healthy growth of his plants, hit upon them by experiment most likely, whilst probably the "scientific" cultivator has taken a lot of pains to afford the conditions about which the plants are probably indifferent and omitted those upon which everything depends.

Kew. *W. Watson.*

The Study of Botany.

To the Editor of Garden and Forest:

Sir.—I have been much interested in your various articles advocating the study of botany by young people, and think you may care to print the following sentences as an indication that those who are best qualified to speak on the subject of education are in agreement with your views. I quote from an article called "Education in Boyhood" by President Timothy Dwight, published in the April number of the *Forum:*

"I would most heartily respond also to the words of the gentlemen of the Society of Naturalists who have addressed a paper to the teachers of schools and colleges in which they commend with special emphasis the study of botany and physical geography for the years of school life. The knowledge of botany gives a joy which should be in the possession of every educated man, and should be gained, as it easily can be, in the early youthful season. Science everywhere brings us into a close relation with nature. The boy in his first days of growing boyhood is open to all the sympathies which this relation bears with itself. Let him by all means have the sympathies awakened. He may not indeed be able to penetrate very deeply into what nature has to reveal to him, but he may see with delight all that he can as yet understand. . . . The beginning is never to be lightly thought of, because it has not the fullness of the end. . . . There is cheerful hope for the youth whose mind and heart are stirred with love for all the truth and beauty hidden in the natural world."

Pittsburg, Penn. *W. G. R.*

Hardy Plants at Passaic, New Jersey.

To the Editor of Garden and Forest:

Sir.—Hardy plants are such general favorites that a few notes of a hurried visit to the nursery of Mr. Henry Meyer (successor to Woolson & Co.), at Passaic, New Jersey, may be of interest. Mr. Meyer has lately removed to a property several hundred feet north of his former grounds and now has ample room to develop his growing business. The nursery fronting on the Passaic River and extending back with several acres of plateau, embraces also a wood-covered slope which is being utilized for the naturalization of suitable plants. The houses are long, low, ten-foot spans, especially built for the propagation and protection of hardy and half hardy stock, no tender plants being grown. Though great spaces have been made in the benches by early shipments of plants, all the old favorites and many new ones were to be seen by scores and hundreds. Mr. Orpet, the skillful propagator of the establishment, is an enthusiast in hardy-plant culture, and here may be seen seedlings of many plants under trial that their merits may be tested before they are sold. Of course in a nursery of this kind little effort is made to grow flowers, but many interesting ones could be seen. *Primula verticillata* is a gem—a strong growing species from Abyssinia with fragrant yellow flowers. The leaves are large, four to five inches long and covered profusely with "meal"; altogether a charming variety, although of course requiring the protection of glass and attention in the way of careful watering. *P. cortusoides* is also a very satisfactory species just coming into bloom. This also seems happier in a house or frame. *Dianthus latifolius* was a mass of rich, large, crimson blooms. If this variety proves as continuous a bloomer as it now promises to be it will be a first rate garden plant. Pinks usually have much too short a blooming season. The Clove Pinks were here in great variety, but "Paul Engelheart" with its great crimson flowers on rigid stems was the only one in bloom. The Drabas are neat little alpine plants. Two good ones are *D. bruniifolia* (Caucasian), which was showing its yellow flowers above dense mats of light yellow foliage, and *D. cuspidata*, with its attractive bronzy rosettes. A new alpine is the double-flowered *Alsine verna*, which forms carpets of very fine dark green foliage, studded with pure white small double flowers. It is a gem for the rockery.

In the frames were blooming *Isopyrum biternatum*, a charming native plant with the aspect of the little wood Anemone. *Anemone Apennina*, with its beautiful blue flowers, was in full bloom, following closely *A. blanda*, whose season has ended. Shortia established in pots showed its lovely white flowers. White Violets and *Phlox subulata* made charming bits of color. In the fields the hybrid Hellebores were still in bloom, quite uninjured by any weather changes. Polyanthus and Auriculas were of course in force. Unless for trade purposes it seems a mistake to grow the former of these in frames, as on a well drained border they are perfectly hardy and much more floriferous than the plants protected by frames, where their energies seem to tend more to the production of leaves. Alstrœmerias are favorite plants here, *A. aurantiaca* and *A. Peruviana* being established in warm quarters, while the somewhat rare *A. peregrina alba* was opening its pure white blooms in one of the houses. A large breadth of *Chionodoxa Luciliæ* was a brilliant picture in blue, rivaled by the light blue flowers of *Scilla puschkinioides*, one of the best of the early Squills. Narcissi are grown in great abundance, Mr. Woolson in former years having had a very large collection which he was wont to exhibit at the shows of the New York Horticultural Society. The collection is somewhat reduced now and comprises principally the bold growing kinds of the most esteemed varieties. Henry Irving and Sir Watkin had passed out of bloom, but beside a grand lot of Horsfield's variety in its prime, the numerous other kinds seemed only fair, though favored with all the fashionable names.

Time was too limited to investigate the treasures of the hillside, where it would seem that many shade-loving plants could be grown very successfully; but it was pleasing to see testimony of the growing demand for well known plants in the great stock of Aquilegias, Artemisias, Phloxes, Irises of all kinds, *Coreopsis lanceolata*, *Erica carnea*, *Daphne Cneorum*, *Anemone Japonica* and scores of other sterling old-fashioned kinds among the novelties of promise.

New York. *G.*

Recent Publications.

The Garden, as Considered in Polite Literature; with a Critical Essay by Walter Howe. New York: G. P. Putnam's Sons.

Inside and out this is one of the most charming little books ever presented to lovers of gardens. As it forms the twenty-seventh volume of the Messrs. Putnam's well known "Knickerbocker Nugget Series," the character of its pretty binding and delicate typography do not need particularly explanation. The essays it contains begin with Pliny the Elder's "Pleasures of the Garden," which is followed by his nephew's famous descriptions of his two country-seats, types of the more modest and the most sumptuous kinds of Roman villas. Bacon is the next author quoted, with his delightful little paper "On Gardens," and Sir William Temple follows. Then come three essays from the *Spectator*, two by Addison, and one which has been variously attributed to Pope and to Dr. Parnell. A chapter of Pope's from the *Guardian* and Lady Mary Wortley Montague's "Letters to the Countess of Bute" succeed; and then we have extracts from Whateley's "Observations of Modern Gardening," from which is usually dated the rise of our literature dealing systematically with gardens of the modern, natural, landscape sort. Oliver Goldsmith's "Description of a Chinese Garden" and "History of a Poet's Garden," and Horace Walpole's little biography of Kent and "History of the Modern Taste in Gardening" are then given, and the book concludes with John Evelyn's "Of Fences and Quickset Hedges," which is placed out of its chronological position, yet wisely, as it differs from the other essays in being of a less general character.

All these essays are of course familiar to students of literature and of the history of gardening. But even to readers of this kind their association in a single volume will give them a fresh charm, and they will undoubtedly be new to many whose interest in gardens has been of a practical rather than a literary sort. But their value to either class of readers would have been far smaller without the delightful and in-

structive essay with which Mr. Howe has prefaced the book. Modestly called an "introduction" it is in fact a masterly little sketch of the history of gardening in which many authors are quoted who have no place in the body of the book, while the historical significance of those who have such a place is made clear. Especially interesting are the passages which explain that different styles of gardening have developed since the seventeenth century although we are accustomed to mass them together under the general name of the "naturalistic" style; and also those which lay stress upon the progress of the art in recent days and the greater difficulty of the tasks laid upon the modern designer as compared with those of his predecessors. "The ends of the earth," says Mr. Howe, "now contribute a wealth of plant life adapted to useful and ornamental tree and shrub-culture and to decorative horticulture. Their habits and relative value in a landscape effect, or in a garden, must be familiarly known and felt by an artist who may be called upon to make studies for a lodge in Scotland, a villa at Cannes, or a park in Australia; who may be required to bring back the primitive verdure to the banks of Niagara, to preserve the natural beauties of the Rockies, or to plant the plains with the forests they can and should be made to support. The rich flora of China and Japan have now been acclimated in Europe—and even more successfully in America—and the enormous number and variety of trees, shrubs, herbaceous and other plants now added to the resources of gardening call for correspondingly greater learning and training than has ever before been given to the subject, so that the accomplished landscape artist of to-day is as far beyond the Kents and Le Nôtres of the seventeenth and eighteenth centuries as they were beyond the topiarius who tortured the trees and shrubs of Pliny and the Cæsars."

Nothing could be more judicious than the following remarks with which our brief notice of this delightful little book must close: "Two qualities which usually distinguish professional from amateur productions in art—namely, simplicity and breadth of treatment—are especially important when applied to the face of Nature itself. True, Nature will, in course of time, protect herself from the misguided assaults of well-meaning amateurs by covering up or wholly destroying their abortive exertions. A trained artist, on the other hand, knows how to assist Nature without resorting too bluntly to the easy device of servile imitation. In such work, particularly as now taught and practiced, there is produced an impression of repose and well-balanced composition that is suggestive of natural effect and yet satisfactory as a work of art." How true this is, yet how constantly does the public admire a beautiful park for its "natural" charm, forgetting the fact that there is nothing like a park in Nature, and that it requires the very highest artistic skill to produce one which shall look as though Nature might have formed it.

Periodical Literature.

The most attractive articles in recent numbers of the *Century Magazine* have been three, written and illustrated by Mr. John La Farge, called "An Artist's Letters from Japan." The series will be continued, and promises to give the untraveled reader a more vivid and fresh idea of the land of Chrysanthemums than has hitherto been given in our language. The most interesting chapter thus far published appeared in March. Text and pictures are equally delightful, and together they emphasize various points with regard to the Japanese treatment of landscape and plants which, in a balder fashion, have already been suggested to our readers. For example, the benefit that a beautiful view derives from some sort of foreground framing is admirably shown in one of the pictures where tall trees on steep banks draw close to the road, and it is spanned by a torii, through which the approaching eye perceives a wide plain, and as the centre of the picture a group of low buildings and trees. A torii, it should perhaps be explained, is composed of four bars, two set upright and two running across near together at the top, the upper one being curved with the concave side up. "This assemblage of four lines of stone or wood or bronze," writes Mr. La Farge, "is to me one of the creations of art like the obelisk or the pyramid. Most impressive, most original of symbolic entrances, whether derived from sacred India or from the ancestral ignorance of Polynesia, there is something of the beginning of man, something invented while he lived with the birds in this elementary porch, whose upper line, repeating the slope of hill and wave, first embodied the curve that curls all upper edges in the buildings of the farther East. . . . Looking through a torii one is sure to be in the direction of something sacred, whether it be temple or shrine or holy mountain. Neither closeness nor distance interferes with this ideal intention, and the sacred Fusi-yama is often seen a hundred miles away in the sky, framed by these lines, built for the purpose." Well may the writer say that "the Japanese sensitiveness to the beauties of the outer world is something much more delicate and complex and contemplative, and, at the same time, more natural, than ours. Outside of Arcadia I know of no other land whose people hang verses on the trees in honor of their beauty, where families travel far before the dawn to see the first light touch of the new buds." Of the forests along the traveler's way, he says: "Sometimes there were traces of enclosure about these woods; sometimes they had no edgings but their own beautifully modeled contours. Long ages, respectful care, sometimes fortunate neglect, have made of these reserved spaces types of an ideal wildness, for these are sacred groves, and they are protected by the divine contained within them. This preservation of a recall of primeval nature, this exemption of the soil from labor, within anxious and careful tillage, is a note of Japan constantly recurring and a source of perpetual charm. . . . As the evening came on we crossed a large river and looked down from the height of the new bridges upon the discarded ferry-boats, and upon the shape of a more fantastic one that was never meant to sail—a Pine-tree, shaped and trimmed, spread its green mast and sails in a garden by the water." The famous avenue of giant Cryptomeria, twenty miles in length, that leads to the shrines of Nikko has often been described before, but these touches of detail show a true artist's eye: "Where an occasional habitation or two or three are niched in some opening, the tall columns of the great trees are interrupted by spaces filled with crossed branches of the wilder Pine, and behind these, outside, sometimes the light green, feathery mass of a Bamboo grove. Against the bank stood low thatched buildings; near them the great trees were often down, or sometimes dying; an occasional haystack, sliced off below by use, was fastened in thick projection around some smaller tree. Once, at a turn of the road near a building with a wide roof pushed against the corner-bank, out of a basin fringed with Iris sprung in the air a little jet of water. Near by a solitary ditcher had placed in a Bamboo fence some bright red blossom, with its stem and leaves, apparently to cheer him at his work." The picture called "The Waterfall in our Garden" is most interesting as showing how keen is the Japanese sense of fitness and harmony in gardening design. How often do we see Weeping Willows where they look badly themselves and hurt everything about them! So often that we have been tempted to feel that there can be no way of placing them well. But look at this picture and we see that in the lands whence they originally came they are charmingly employed. Here a narrow and very drooping one stands on a bank just beside the top stones of a little cascade. The falling water and the falling branches repeat one another's lines, and each feature gains by the presence of its neighbor, while behind the Willow lower trees of more normal shapes do not stand inharmoniously erect, but bend to form a sort of little arch above the waterfall.

A few weeks ago we noted some words of Mr. Charles Dudley Warner's, comparing the Rose and the sentiment it breathes with the Chrysanthemum, which, to his eyes, seems a mere showy, heartless and unpoetic plant. It is amusing to learn from Mr. La Farge that a Japanese might very well speak in just the opposite way of these two flowers. When he "smelled for the first time the fragrance of wild Roses, looking like ours but a little paler," he says: "This was the first thing which reminded me of home—the Roses that the Japanese do not seem to care for, do not seem to understand. With them the Rose has no records, no associations, as with us, for once on this side of the garden of Iran, the Peony and the Chrysanthemum, the Lotus and the Iris, the Peach, the Cherry and the Plum make up the flower poetry of the extreme east."

Recent Plant Portraits.

Phajus Cooksoni, *Gardeners' Chronicle*, March 29th; a handsome new hybrid, with nankeen-colored flowers, flushed with pink, raised from *Phajus Wallachii* and *P. tuberculosus*, the former being the seed parent.

Citrus Japonica, *Gardeners' Chronicle*, March 29th.

Begonia Adonis, *Revue Horticole*, April 1st; a new winter-blooming hybrid of French origin.

Botanical Magazine, April:

Prestoea Carderi, *t.* 7108.

Sicana spherica, *t.* 7109.

Peliosanthes albida, *t.* 7110.

Iris orchioides, *t.* 7111; a native of central Asia, and nearly allied to *Iris Caucasica*, which differs from it in its dwarfer habit, by its thickened leaf margins and paler yellow flowers.

Vanda Kimballiana, *t.* 7112; a beautiful and now popular Orchid, the secret of whose native country has been carefully preserved by the introducers, Messrs. Hugh Low & Co. Its nearest ally, *Vanda Amesiana*, is said to be a native of India.

Notes.

Over 200,000 acres of Florida land are said to contain deposits of phosphate. Much of the richest rock can be mined for twenty-five cents a ton.

The annual banquet given by the Trustees of the Missouri Botanic Garden in honor of Henry Shaw, the founder of that establishment, will take place in the Southern Hotel, in St. Louis, on the evening of Monday, May 26th.

It is encouraging to learn that at a recent meeting of the Colorado State Horticultural and Forestry Association two of the subjects which were most earnestly discussed were "The Ornamentation of School Grounds" and "Horticulture and Entomology in the Schools."

Two of the English horticultural papers just received speak with enthusiasm of hanging baskets filled with *Lachenalia pendula* now in bloom. The drooping habit of this plant both in foliage and flower, and its simple requirements (see vol. ii., pp. 28 and 30), fit it admirably for this use.

Mr. E. Tidmarsh, Curator of the Botanic Gardens at Grahamstown, Cape of Good Hope, writes that the cottony cushion scale, so destructive to Orange-groves in Australia and California, is probably a native of Madagascar. Missionaries report that it has preyed upon Lemon-trees there from time immemorial.

Mr. A. H. Curtiss, in the Jacksonville *Times-Union*, advocates the planting of the Camphor-tree in Florida in view of the increased demand for camphor as a necessary ingredient in the smokeless gunpowder which is likely soon to come into general use for purposes of war. The recent increase in the price of the gum suggests the idea.

This has been a successful season for nurserymen in California. Orange-growers have been forced for several years to depend largely on Florida stock, but the frosts this spring killed the young trees in Florida. The large acreage of Orange-groves planted last fall consumed all the local trees, and now there is a call for 120,000 Orange-trees that cannot be filled.

Monsieur Froebel, the well known nurseryman of Zurich, calls attention, in the *Bulletin De la Société d'Horticulture d'Genève* of Rose-growers, to the value of *Rosa laxa* as stock in the place of the Dog Rose, *Rosa canina*. Monsieur Froebel finds that *Rosa laxa* does not send up suckers, that its branches are very vigorous, almost destitute of spines and lateral branchlets, that the wood is hard with very little pith, and that the plants are exceedingly hardy.

Monsieur André, speaking in a recent issue of the *Revue Horticole* of the new seedling varieties of Clivia, which are just now attracting much attention in Europe, declares that none of the recent seedlings surpass or equal, perhaps, these four old varieties, Madame Van Houtte, Marie Van Houtte, Lindeni and Van Houttei. It is hard to believe, however, that they can equal some of the varieties which have lately found their way into commerce through the English nurserymen, notably Grandiflora and Veitchii, which are both certainly exceedingly fine in foliage and in the size and color of the flowers.

According to *L'Horticulteur*, there are one hundred and five gardens or squares in the city of Paris. About a million plants are used every year in their decoration, including 300,000 Geraniums, 60,000 Begonias, 33,000 Forget-me-nots, 33,000 Ageratums, 26,000 Azaleas, 7,000 Hyacinths, etc. These gardens are under the direction of Monsieur Laforcarde, the head-gardener of the city, who employs four hundred workmen in keeping them in order; the annual expenditure being only about 800,000 francs, which seems a very small sum in comparison with the amount spent in the care and decoration of the public gardens in this country, notably in Boston.

A bulletin issued by the United States Department of Agriculture contains a list of the horticulturists employed at the various stations, with notes regarding the work they have undertaken. Forty-two stations are named, but with regard to twelve no information is given. At seventeen stations, it is announced, special attention will be given to questions of synonymy; at two seed-testing will be systematically pursued, and in several the improvement of native wild fruits will be one of the chief aims. Plant diseases will be generally studied, and new varieties of fruits and vegetables tested. Cultivators are asked to send in such varieties in order that their value may be ascertained.

A public meeting for the purpose of increasing the interest in Arbor Day and in forestry generally was held on Saturday, in the large hall of the Museum of Natural History, under the auspices of the New York State Forestry Association. General Viele presided, and B. E. Fernow, Chief of the Forestry Division of the Department of Agriculture, made the principal address, which was an admirable statement of the reasons for restoring and preserving the forests of the country. Other addresses were made by Col. Balch, Professor B. G. Northrup, Professor D. S. Martin, Chancellor McCracken, Doctor Stephen Smith and William Potts. The attendance was by no means as large as it should have been.

A Paris correspondent writes that the Perpetual Carnation Marguérite is being much talked of in the horticultural world. It appeared in France last year and a bed of it could be seen in the Trocadéro gardens during the exhibition. It belongs to a race of Carnations which, it is said, originated in Italy. Its principal merit is that it flowers the first year from seed. Seed sown under glass at the end of February give plants which, after having been pricked out, commence to bloom at the end of June and continue to give flowers throughout the summer and autumn. Indeed, it is said that the flowering season can be prolonged into the winter if the plants are taken to a cool greenhouse or placed in a frame. The Marguérite Carnation forms dwarf tufts about fifteen inches in height; its stalks are rigid, and their excellent habit recalls that of the so-called "Tige de Fer" Carnations. The flowers are large, well-formed and agreeable in odor; the petals are fringed, and, as regards color, show all the tones between pure white and brilliant red. Different varieties exist as self-colored, blotched and striped.

The *Gardeners' Chronicle* recently published a picture of a curious Chrysanthemum sport which appeared on a plant of the Source d'Or variety grown by Mr. Maries, of Lytham. One half of the flower-head consisted of "yellow, flat strap-shaped florets; the other of dark golden bronze florets, revolute at the edges. Such cases are always interesting and are susceptible of various interpretations. That which seems most plausible in this case is, that the appearance is due to the unmixing or separation of previously blended components. In the case of the Chrysanthemum, which has been crossed and recrossed and crossed again, for an untold number of years, it is evident that the breed must be very mixed indeed, and there can be little wonder if a 'return to first principles' occasionally occurs." This theory, added the *Chronicle*, is not susceptible of actual proof in the case of the Chrysanthemum. But it can be proved with regard to a sport of Veitch's Calanthe, of which an illustration was likewise given. This plant is known to be a hybrid between *C. rosea* and *C. vestita*. The diverse features of the parents are, as a rule, thoroughly blended in the hybrid, but in the single blossom in question certain features of each parent were combined in scarcely altered shapes.

The tariff discussion has brought out some interesting facts with regard to Flax production in the United States. More than a million acres in our northwestern states are annually planted with the Flax plant, but very little linen cloth, and that of the coarsest quality, is made here. A few mills are engaged in the manufacture of twine and thread from the fibre, but the Flax is chiefly grown for the seed, of which some thirteen million bushels are produced each year. The crop is raised on new ground, the seed being thinly sown, and, without cultivation, bearing a heavy yield of seed. When this is ripe the plants are cut by horse-reapers, the seed threshed out by a machine, and the straw burned on the ground. The fact that Flax is not grown here for its fibre is laid by some to the account of our climate as being too dry and hot for its best development, but by others to the great cost of cultivating the plant with such an end in view. In Europe each farmer devotes but a small plot to Flax, prepares the soil as carefully as for a garden-bed, sows the seed very thickly, and keeps the crop nicely weeded. The plants, coming up closely, grow tall and branchless, developing the fibre at the expense of the seed, and they are pulled up by the roots before the seed ripens. After this the fibre must be extracted on the farm by laborious hand processes, as it costs too much to send the Flax in bulk to the market. It will be easily seen that, even were our climate propitious, American farmers would be slow to engage in such a time and labor absorbing industry.